



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/064,998	09/06/2002	Arun Kumar Jaura	201-1225	1850

7590
Artz & Artz, P.C.
28333 Telegraph Road
Suite 250
Southfield, MI 48034

11/29/2006

EXAMINER

COOLMAN, VAUGHN

ART UNIT	PAPER NUMBER
----------	--------------

3618

DATE MAILED: 11/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/064,998		JAURA ET AL.	
	Examiner		Art Unit	
	Vaughn T. Coolman		3618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

In view of the appeal brief filed on 8/21/2006, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

Claim Objections

Claim 9 is objected to because of the following informalities: 630 degree Fahrenheit in line 3 appears to be a typo. The specification clearly limits the temperature of the motor to 350 degree Fahrenheit.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 4, 6, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barrie et al (U.S. Patent No. 5,217,085).

[claim 1] Barrie discloses (see FIGS 1-3) a cooling system for a vehicle powertrain having a motor (28) and a transmission (30) comprising:

said motor having a stator housing;

a cooling loop (shown in FIG 2) in heat conductive contact with said motor stator housing and with said transmission;

said cooling loop comprising a heat exchanger (62) and conduits providing a fluid flow connection between said motor stator housing said transmission, and said heat exchanger, said cooling loop further comprising a mechanical transmission pump (46) and an auxiliary pump (52); and said cooling system further comprising a controller (110), for receiving and processing

Art Unit: 3618

input (104) from at least one vehicle sensor (102). Barrie does not disclose the controller commanding said auxiliary pump to operate when the processed input of the at least one vehicle sensor exceeds a pre-selected threshold. However, Barrie does control the valve (106) in response to the input from the vehicle sensor exceeding a pre-selected threshold (Column 5, lines 45-60). Barrie also teaches, in the embodiment shown in FIG 1, a controller (22 – not labeled in FIG) controlling a pump (10, 18) based on vehicle sensor input (24). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system shown by Barrie with the controller as also taught by Barrie, since such a modification would provide the advantage of providing higher flow rates of the coolant in order to more efficiently cool the motor and transmission.

[claim 3] Although not explicitly stated by Barrie, the controller disclosed is obviously a vehicle system controller as it is controlling a system, the cooling fluid pumping system, of a vehicle. If applicant is attempting to claim a *systems* controller, it would have been obvious to one of ordinary skill in the art at the time the invention was made for the controller of the pump to be integrated into the main controller or CPU of the vehicle since such a modification would provide the advantage of centralizing the control modules and allowing faster communication between the various vehicle systems' control programs.

[claim 4] Barrie further shows the cooling system including bypass conduits and bypass valves having actuators (shown in FIGS 2 and 3) independently controllable by the controller to operate when the processed input from at least one vehicle sensor exceeds a pre-selected threshold (Column 5, lines 35-60). Barrie does not teach the auxiliary pump being reversible, however, it would have been obvious to one of ordinary skill in the art at the time the invention

Art Unit: 3618

was made to install a reversible pump in the location of auxiliary pump (52). The motivation to do so is that by looking at the valve configuration, it is obvious that one could provide increased coolant flow to the motor (above the maximum flow rate of the main pump 46) by pumping the auxiliary pump in an opposite direction than disclosed by Barrie.

[claim 6] Barrie further teaches that an old and well known configuration for a powertrain containing a motor and transmission arrangement is in a series configuration (Column 1, lines 15-17).

[claim 9] Barrie discloses all of the elements of the claimed invention as described above except for the exact range of temperature that control the operating parameters of his cooling system. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the range of maximum temperature for the transmission and motor to be no greater than 250 degrees Fahrenheit and 630 [350] degrees Fahrenheit, respectively, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Barrie in view of Prabhu et al (U.S. Patent No. 6,670,788)

[claim 5] Barrie teaches all aspects of the claimed invention as discussed above except for the cooling system's motor being an integrated starter-generator. Prabhu et al teaches a hybrid vehicle including an ISG or Integrated Starter Generator (11; Column 1, lines 17-25).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system shown by Barrie, with the ISG as taught by Prabhu, since the

ISG is a known replacement for the motor/generator and performs additional functions such as automatic start-stop and regenerative braking for enhancing vehicle versatility and functionality.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Barrie in view of Barnhardt (U.S. Patent No. 4,284,913).

[claim 7] Barrie discloses all of the elements of the claimed invention as described above except for it is not readily apparent whether the auxiliary pump is located at the interior of the transmission. Barnhardt teaches a cooling system for a vehicle powertrain having a motor and a transmission (shown in FIG 2) wherein an auxiliary pump (16) is located on the interior of the transmission. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system shown by Barrie with the pump location as taught by Barnhardt, since such a modification would provide the advantage of protecting the pump from damage from external debris.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Barrie in view of Harper (U.S. Patent No. 6,066,060).

[claim 8] Barrie discloses all of the elements of the claimed invention as described above except for it is not readily apparent whether the auxiliary pump is located to the exterior of the transmission. Harper teaches a cooling system for a vehicle including an auxiliary pump (50) located external to the transmission (shown in FIGS 1 and 2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system shown by Barrie with the external pump as taught by Harper, since such a modification, according to

Art Unit: 3618

Harper, would provide the advantage of not reducing the operating efficiency of the transmission, in contrast to an internal pump (Column 8, lines 6-11).

Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barrie in view of Tanaka et al (U.S. Patent No. 5,443,130).

[claims 10 and 11] Barrie discloses all of the elements of the claimed invention as described above except for the structural relationship of the stator and transmission housings. Tanaka discloses a transmission and motor configuration wherein the stator housing is overlapped by a transmission housing as well as being adjacent to the transmission housing (shown in FIG 2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system shown by Barrie with the housing configuration as taught by Tanaka, since such a modification would provide the advantage of absorbing thrust from the transmission gears in an efficient and safe manner (Column 8, lines 50-68; column 9, lines 1-15).

Response to Arguments

Applicant's arguments with respect to all pending claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Art Unit: 3618

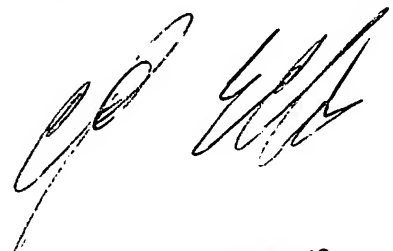
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vaughn T. Coolman whose telephone number is (571) 272-6014. The examiner can normally be reached on Monday thru Friday, 8am-6pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Ellis can be reached on (571) 272-6914. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


vtc
11/23/2006

Travis Coolman
Examiner
Art Unit 3618


CHRISTOPHER P. ELLIS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600